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Craspedodidymum and *Corynespora* spp. nov. and a new anamorph recorded from southern China

Li-Guo Ma, Jian Ma, Yi-Dong Zhang & Xiu-Guo Zhang*

Department of Plant Pathology, Shandong Agricultural University, Taian, 271018, China
*Correspondence to: *zhxg@sdau.edu.cn, sdau613@163.com*

Abstract — Two new species are described and illustrated: *Craspedodidymum fujianense* from dead branches of *Acacia confuse* and *Corynespora fujianensis* from dead branches of *Myrioneuron faberi*. *Craspedodidymum proliferans* is a new record for China. These three species were collected from tropical and subtropical forests in southern China.

Key words — microfungi, taxonomy

Introduction

China is considered an important world reservoir of biodiversity. Many wood-inhabiting fungi collected in China have recently been published (Dai et al. 2009, Dai & Li 2010, Ma et al. 2010). As part of studies on the fungal diversity of southern China, numerous collections of anamorphic fungi on dead wood were made from tropical and subtropical forests. Among these, two undescribed species and a new record were found. These three species are described, illustrated and compared with similar species. The specimens are deposited in HSAUP (Herbarium of the Department of Plant Pathology, Shandong Agricultural University) and HMAS (Mycological Herbarium, Institute of Microbiology, Chinese Academy of Sciences).

Taxonomy

Craspedodidymum fujianense L.G. Ma & X.G. Zhang, **sp. nov.** Fig. 1

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Coloniae in substrato naturali effusae, atrobrunneae. Mycelium partim superficiale vel immersum. Conidiophora macronematosa, mononematosa, solitaria, simplicia, erecta, recta vel leniter flexuosa, laevia, crassitunicata, septata, brunnea vel atrobrunnea, ad apicem pallida, 240–320 μm longa, 6.5–8.5 μm lata. Cellulae conidiogenae integratae, terminales, monophialidicae, cylindricae, brunneae, 21.5–25 × 11–12 μm, cum collaretto cupulato, 6.5–7.5 μm longo, ad apicem 6.5–9.5 μm lato, ad basim 4.5–5.5 μm diamm

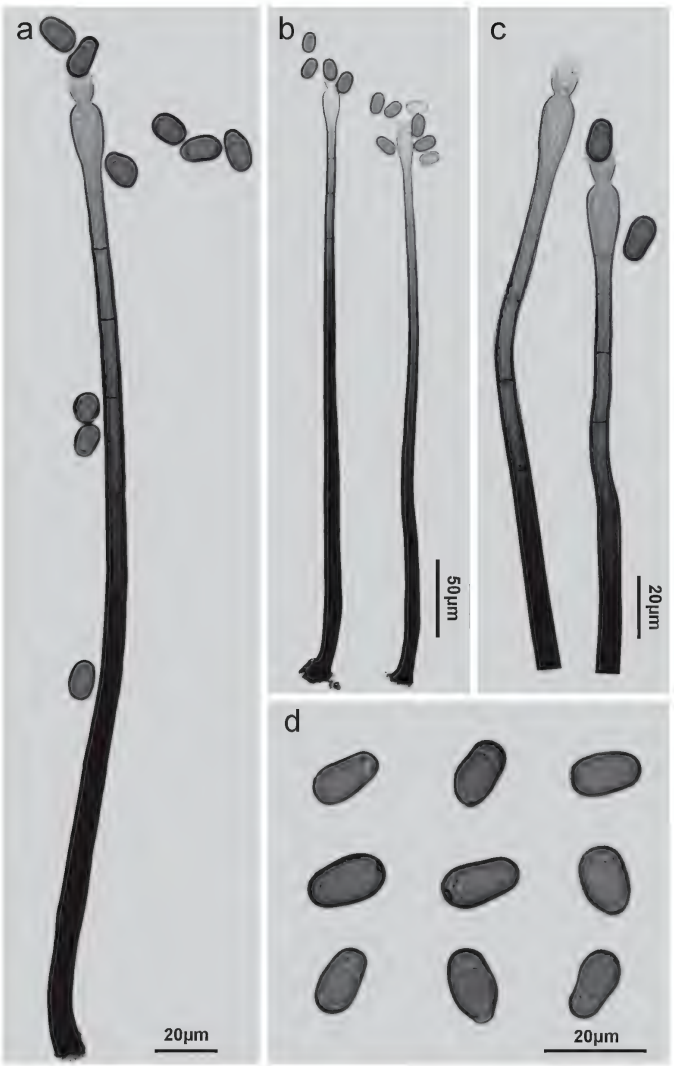

Fig. 1. *Craspedodidymum fujianense*. a, b. Conidiophores, conidiogenous cells and conidia. c. Conidiogenous cells with collarettes. d. Conidia.

praeditae. Conidia *13–15.5 × 7.5–10 μm, crassitunicata, laevia, brunnea, oblonga, 0-septata.*

Type: China, Fujian Province: the National Forest Park of Wuyishan, on dead branches of *Acacia confusa* Merr. (*Mimosaceae*), 15 Aug. 2009, L.G. Ma (**holotype**, HSAUP H1010-2; **isotype** HMAS 146089).

Etymology: in reference to the province where the type was found.

Colonies on the natural substratum effuse, dark brown. Mycelium superficial and immersed. Conidiophores macronematous, mononematous, solitary, simple, erect, straight or slightly flexuous, smooth, thick-walled, septate, brown to dark brown, paler towards the apex, 240–320 µm long, 6.5–8.5 µm wide. Conidiogenous cells integrated, terminal, monophialidic, cylindrical, brown, swollen at the subapical region, 21.5–25 × 11–12 µm, with a collarette at the apex. Collarette funnel-shaped, 6.5–7.5 µm high, 6.5–9.5 µm wide at the apex, 4.5–5.5 µm diam. at the base. Conidia 13–15.5 × 7.5–10 µm, thick-walled, smooth, brown, oblong, 0-septate.

Holubová-Jechová (1972) established *Craspedodidymum* for *C. elatum* Hol.-Jech., the type species. The genus is characterized by macronematous, mononematous, simple or branched conidiophores bearing integrated, terminal, enteroblastic, monophialidic, cylindrical, apically swollen conidiogenous cells with a large and distinct funnel-shaped terminal collarette (Holubová-Jechová 1972, Ellis 1976, Yanna et al. 2000). *Craspedodidymum pulneyense* Subram. & Bhat has been placed in synonymy with *C. proliferans* (Bhat & Kendrick 1993). Eleven species are currently recognized in this genus, none of which were described from China. *Craspedodidymum* is reported for the first time from China.

Craspedodidymum fujianense is unique in this genus in producing oblong 0-septate conidia without a papilla. It most closely resembles *C. siamense* Pinruan, which also produces 0-septate conidia that are rounded at the base (Pinruan et al. 2004). However, *C. fujianense* differs by its oblong, shorter and wider conidia.

Craspedodidymum proliferans V. Rao & de Hoog, Stud. Mycol. 28: 64, 1986.

Fig. 2

Colonies on the natural substratum effuse, dark brown. Mycelium partly superficial and partly immersed. Conidiophores macronematous, mononematous, solitary, erect, simple, straight or slightly flexuous, percurrently proliferating, smooth, thick-walled, septate, brown to dark brown, unbranched, paler towards the apex, up to 350 µm long, 7.5–8.5 µm wide, slightly swollen at the base. Conidiogenous cells integrated, terminal, monophialidic, cylindrical, brown, swollen at the subapical region, 20.5–24 × 9.5–10 µm, with a collarette at the apex. Collarette funnel-shaped, 4.5–6.5 µm high, 7–7.5 µm diam. at the opening, narrowing to 4–4.5 µm diam at the base. Conidia 9.5–13 × 8.5–12 µm, thick-walled, smooth, dark brown, obovoid, subglobose to trapezoid, truncate at the base, 0-septate.

Specimen examined: China, Fujian Province: the National Forest Park of Wuyishan, on dead branches of *Magnolia paenetalauma* Dandy (*Magnoliaceae*), 15 Aug. 2009, L.G. Ma, HSAUP H1031 (duplicate HMAS 146090).

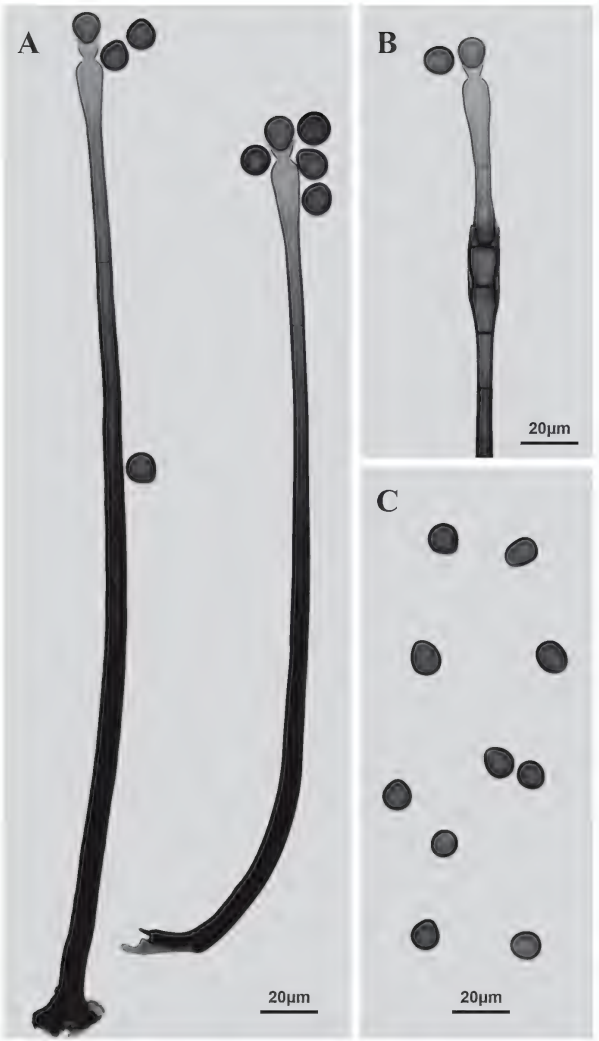

Fig. 2. *Craspedodidymum proliferans*. A. Conidiophores, conidiogenous cells and conidia. B. Conidiophore with percurrent proliferation. C. Conidia.

Craspedodidymum proliferans is reported for the first time from China. Compared with the morphological characters of the species as described by Rao & de Hoog (1986), both of the collections have obovoid, subglobose to trapezoid, 0-septate conidia with truncate base, with almost identical conidial size (9.5–13 × 8.5–12 μm vs. 10–14 × 8–11 μm). We believe they are the same

species. *C. proliferans* is most similar to *C. cubense* J. Mena & Mercado (Mercado & Mena 1992) in conidial shape, septation and base, but differs from *C. cubense* by its much narrower conidia.

Corynespora fujianensis L.G. Ma & X.G. Zhang, **sp. nov.** FIG. 3

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Coloniae in substrato naturali fuscae, effusae. Mycelium semper superficiale, ex hyphis ramosis, septatis, subhyalinis vel pallide brunneis, laevibus, 2–5 µm crassis compositum. Conidiophora singula vel fasciculata, erecta, interdum ramosa, recta, cylindrica, septata, verruculosa, pallide brunnea vel brunnea, per usque ad 7 proliferationes percurrentes successivas cylindricae elongascentia, 700–1300 µm longa, 4–5.5 µm crassa. Cellulae conidiogenae monotreticae, in conidiophoris incorporatae, crassitunicata, terminales, cylindricae, 9.5–14 µm longa, 6.5–9 µm crassa, brunnea. Conidia recta vel leviter curvata, singula, acrogena, obclavata, longer attenuata, laevia, brunnea, crassitunicata, 4–10-distoseptata, 31–90 × 6.5–10 µm.

Type: China, Fujian Province: the National Forest Park of Wuyishan, on dead branches of *Myrioneuron faberi* Hemsl. ex F.B. Forbes & Hemsl. (*Rubiaceae*), 15 Aug. 2009, L.G. Ma (**holotype**, HSAUP H1006-2; **isotype**, HMAS 146094).

Etymology: in reference to the province where the type was found.

Colonies on the natural substrate blackish brown, effuse. Mycelium mostly superficial, composed of branched, septate, subhyaline to pale brown, smooth-walled hyphae, 2–5 µm thick. Conidiophores arising singly or in groups, erect, sometimes branched, straight, cylindrical, septate, verruculose, pale brown to brown, with up to 7 successive percurrent cylindrical proliferations, 700–1300 µm long, 4–5.5 µm thick. Conidiogenous cells monotretic, integrated, terminal, thick-walled, cylindrical, 9.5–14 µm long, 6.5–9 µm wide, brown. Conidia straight or slightly curved, formed singly, acrogenous, obclavate, tapering to the apex, smooth, brown, thick-walled, becoming gradually paler towards the apex, 4–10-distoseptate, 31–90 × 6.5–10 µm.

The genus *Corynespora* was erected by Güssow (1906). Wei (1950) emended the diagnosis of the genus and clarified the conidiogenesis of *C. cassiicola* (Berk. & M.A. Curtis) C.T. Wei [= *C. mazei* Güssow, the type species]. *Corynespora* is characterized by macronematous, mononematous, simple, or branched conidiophores with monotretic, determinate, or percurrent conidiogenous cells, and obclavate to cylindrical, distoseptate, solitary, or catenate conidia. More than 100 species have been validly described under *Corynespora*, 24 of which were described from China, 4 parasitic on plant leaves (Guo 1984), and 20 saprobic on deciduous stems or wood (Zhang & Ji 2005, Zhang & Shi 2005, Zhang & Xu 2005, Shang & Zhang 2007, Wang & Zhang 2007, Zhang & Zhang 2007, Ma & Zhang 2007, Ma et al. 2008, Zhang et al. 2008, 2009).

Among described *Corynespora* species, *C. jasminicola* Meenu et al. (Meenu et al. 1998) and *C. combreti* M.B. Ellis (Ellis 1963) are most similar to *C. fujianensis*

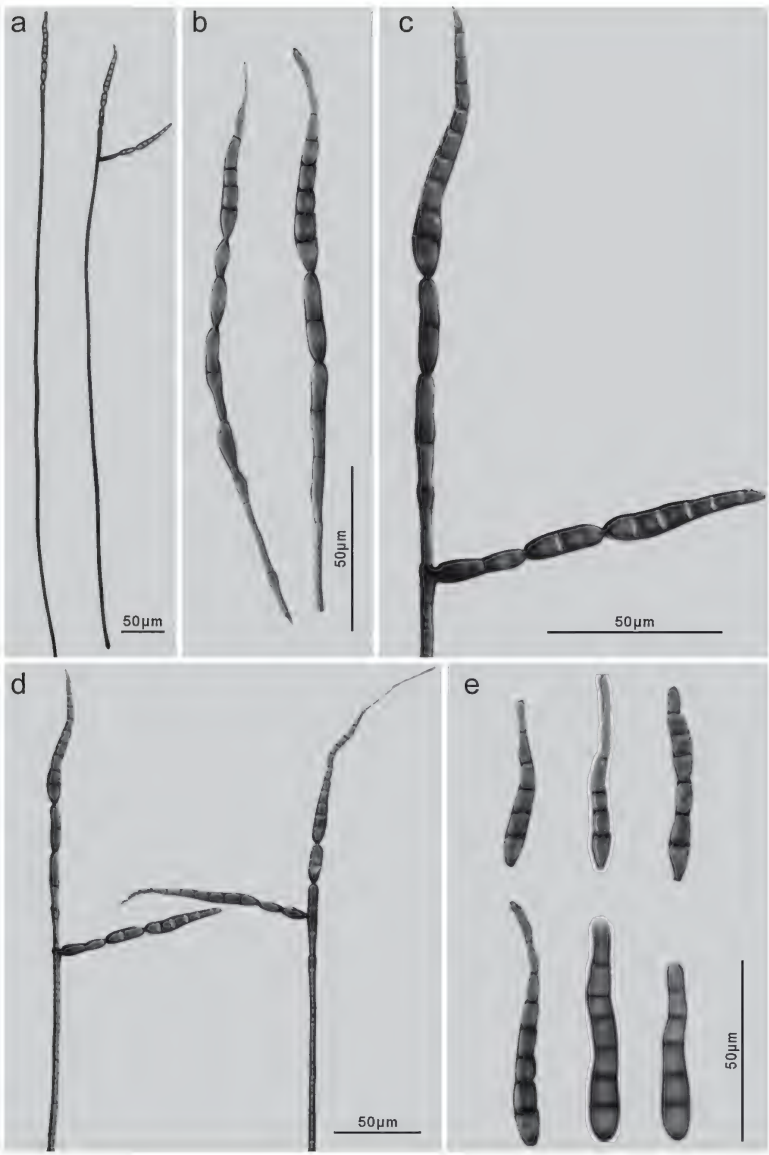

FIG. 3. *Corynespora fujianensis*. a. Conidiophores and conidia. b. Unbranched conidiophores and conidiogenous cells. c–d. Branched conidiophores and conidiogenous cells. e. Conidia.

in having obclavate conidia and branched conidiophores. The conidia of *C. fujianensis* are smaller with fewer septa than those of *C. jasminicola*, and

are not rostrate while those of *C. combreti* are sometimes rostrate. In addition, *C. fujianensis* differs by possessing verruculose and more slender conidiophores.

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